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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,386	06/01/2001	John Edward Archibald JR.	SJ09-2000-0075-US1	2880

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EXAMINER	
TORRES, JOSEPH D	
ART UNIT	PAPER NUMBER
2133	7

DATE MAILED: 09/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/872,386	ARCHIBALD ET AL.	
	Examiner	Art Unit	
	Joseph D. Torres	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 November 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *17-26,29,30 and 41* is/are allowed.

6)☒ Claim(s) *1,3-6,10,14-16,27,28,31-40 and 42* is/are rejected.

7)☒ Claim(s) *2,7-9 and 11-13* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 October 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: "109-1" and "109-2" in Figures 1, 4 and 5. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: '109' on pages 6 and 8-10. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: The specification mentions the following reference sign which does not appear in the drawings: '109' on pages 6 and 8-10.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 5 and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 5 and 16 recite, "the method is executed when the frequency of storage accesses is within a predetermined range". Nowhere in the specification does the Applicant teach a "method is executed when the frequency of storage accesses is within a predetermined range" nor does the Applicant even use the word frequency in the specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. Claims 5 and 16 recites, "the method is executed when the frequency of storage accesses is within a predetermined range". The omitted structural

cooperative relationships are: the relationship between "frequency of storage accesses", "the method is executed" and "a predetermined range".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Yamamuro, Mikio (US 5859823 A).

35 U.S.C. 102(b) rejection of claim 1.

Yamamuro teaches a method for testing a data storage medium for defects (col. 16, lines 37-49, Yamamuro, Note: Step 19 in Figure 20 of Yamamuro whereby CPU 50 determines that data is correctly recorded when the recorded data of each sector is compared with the reproduced data of each sector is a step for testing a data storage medium for defects), the method comprising: writing a data pattern to at least one predetermined region of the storage medium; reading back the written data pattern; comparing the data pattern written to the data pattern read back and identifying any error in the data (col. 16, lines 37-49, Yamamuro teaches that the recorded data of each sector is compared with the reproduced data of each sector to identify any error in the data); if an error in the data was identified, then: identifying a defective region of the

storage medium (col. 17, lines 18-25, Yamamuro, Note: the determination step S19 is a step for identifying a defective region of the storage medium referred to as a defective block in the Yamamuro patent); reallocating a new region of the storage medium (col. 14, lines 62-67, Yamamuro, Note: replacing an ECC block containing a secondary defective sector with a replacement ECC block using a linear replacement algorithm is a step for reallocating a replacement ECC block from the spare area, see Figure 3, Yamamuro); initializing the reallocated new region for access (col. 15, lines 1-7, Yamamuro, Note: recording data indicating that the linear replacement process has been effected in memory 10 is a step for initializing the reallocated new region for access); and replacing the defective region with the reallocated region before any further degradation occurs (col. 14, lines 62-67, Yamamuro, Note: replacing an ECC block containing a secondary defective sector with a replacement ECC block using a linear replacement algorithm is a step for replacing the defective region with the reallocated region before any further degradation occurs).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 3-6, 27, 31-40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamuro, Mikio (US 5859823 A) in view of Fein, Ronald et al. (US 6565608 B1, hereafter referred to as Fein).

35 U.S.C. 103(a) rejection of claim 3.

Yamamuro, substantially teaches the claimed invention described in claim 1 (as rejected above).

However Yamamuro, does not explicitly teach the specific use of reporting errors to a system administrator.

Fein, in an analogous art, teaches reporting errors to a system administrator (col. 15, lines 56-67, Fein). The Examiner asserts that one of ordinary skill in the art at the time the invention was made would have been highly motivated to report errors to a system administrator to allow the system administrator to track errors (col. 15, lines 56-67, Fein).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yamamuro with the teachings of Fein by including an

additional step of reporting errors to a system administrator. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that reporting errors to a system administrator would have provided information allowing the system administrator to track errors (col. 15, lines 56-67, Fein).

35 U.S.C. 103(a) rejection of claims 4 and 5.

See CPU 50 in Figure 1 of Yamamuro.

35 U.S.C. 103(a) rejection of claim 6.

A stress pattern is still test data (see rejection to claim 1, above.).

35 U.S.C. 103(a) rejection of claim 27.

Claim 27 recites a computer program product for carrying out the method of claim 1.

35 U.S.C. 103(a) rejection of claim 31.

Claim 31 recites substantially the same limitations as in claim 1 except as noted, below. In addition claim 31 recites, "an indicator that a discrete region has been written to by the host computer". The Examiner asserts that a recording media inherently requires an indicator that a discrete region has been written to prevent overwriting of data.

35 U.S.C. 103(a) rejection of claims 32-35 and 40.

Specific embodiments for the storage medium do not deviate from the scope or intent of the teachings in the Yamamuro and Fein patents.

35 U.S.C. 103(a) rejection of claims 36 and 37.

Specific embodiments for storing the media surface scanner do not deviate from the scope or intent of the teachings in the Yamamuro and Fein patents.

35 U.S.C. 103(a) rejection of claims 38 and 39.

See rejection to claims 1 and 31, above.

35 U.S.C. 103(a) rejection of claim 42.

See rejection to claims 1, 4, 32-35 and 40.

7. Claims 10, 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamuro, Mikio (US 5859823 A) in view of Lindberg, Mikael et al. (US 6438719 B1, hereafter referred to as Lindberg).

35 U.S.C. 103(a) rejection of claims 10 and 28.

Yamamuro teaches a method for testing a data storage medium for defects (col. 16, lines 37-49, Yamamuro, Note: Step 19 in Figure 20 of Yamamuro whereby CPU 50 determines that data is correctly recorded when the recorded data of each sector is compared with the reproduced data of each sector is a step for testing a data storage

medium for defects), the method comprising: writing a data pattern to at least one predetermined region of the storage medium; reading back the written data pattern; comparing the data pattern written to the data pattern read back and identifying any error in the data (col. 16, lines 37-49, Yamamuro teaches that the recorded data of each sector is compared with the reproduced data of each sector to identify any error in the data); if an error in the data was identified, then: identifying a defective region of the storage medium (col. 17, lines 18-25, Yamamuro, Note: the determination step S19 is a step for identifying a defective region of the storage medium referred to as a defective block in the Yamamuro patent); reallocating a new region of the storage medium (col. 14, lines 62-67, Yamamuro, Note: replacing an ECC block containing a secondary defective sector with a replacement ECC block using a linear replacement algorithm is a step for reallocating a replacement ECC block from the spare area, see Figure 3, Yamamuro); initializing the reallocated new region for access (col. 15, lines 1-7, Yamamuro, Note: recording data indicating that the linear replacement process has been effected in memory 10 is a step for initializing the reallocated new region for access); and replacing the defective region with the reallocated region before any further degradation occurs (col. 14, lines 62-67, Yamamuro, Note: replacing an ECC block containing a secondary defective sector with a replacement ECC block using a linear replacement algorithm is a step for replacing the defective region with the reallocated region before any further degradation occurs).

However Yamamuro, does not explicitly teach the specific use of storing user data in a temporary location during testing.

Lindberg, in an analogous art, teaches storing user data in a temporary location during testing (see Abstract, Lindberg). The Examiner asserts that one of ordinary skill in the art at the time the invention was made would have been highly motivated to store user data in a temporary location during testing in order to test memory during operation (see Abstract, Lindberg).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yamamuro with the teachings of Lindberg by including an additional step of storing user data in a temporary location during testing. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that storing user data in a temporary location during testing would have provided the opportunity to test memory during operation (see Abstract, Lindberg).

8. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamuro, Mikio (US 5859823 A) and Lindberg, Mikael et al. (US 6438719 B1, hereafter referred to as Lindberg)in view of Fein, Ronald et al. (US 6565608 B1, hereafter referred to as Fein).

35 U.S.C. 103(a) rejection of claim 14.

Yamamuro and Lindberg, substantially teach the claimed invention described in claim 10 (as rejected above).

However Yamamuro and Lindberg, do not explicitly teach the specific use of reporting errors to a system administrator.

Fein, in an analogous art, teaches reporting errors to a system administrator (col. 15, lines 56-67, Fein). The Examiner asserts that one of ordinary skill in the art at the time the invention was made would have been highly motivated to report errors to a system administrator to allow the system administrator to track errors (col. 15, lines 56-67, Fein).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yamamuro and Lindberg with the teachings of Fein by including an additional step of reporting errors to a system administrator. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that reporting errors to a system administrator would have provided information allowing the system administrator to track errors (col. 15, lines 56-67, Fein).

35 U.S.C. 103(a) rejection of claims 15 and 16.

See CPU 50 in Figure 1 of Yamamuro.

Allowable Subject Matter

9. Claims 2, 7-9 and 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 17-26, 29, 30 and 41 are allowed.

The following is an Examiner's statement of reasons for the indication of allowable subject matter:

The present invention pertains to a method for testing a data storage medium for defects whereby if an error in the data is identified, then: identifying a defective region of the storage medium; reallocating a new region of the storage medium; initializing the reallocated new region for access; and replacing the defective region with the reallocated region before any further degradation occurs. Claim 2 recites, "**determining** whether the predetermined region contains user data" [Emphasis Added]. Yamamuro teaches a method for testing a data storage medium for defects (col. 16, lines 37-49, Yamamuro, Note: Step 19 in Figure 20 of Yamamuro whereby CPU 50 determines that data is correctly recorded when the recorded data of each sector is compared with the reproduced data of each sector is a step for testing a data storage medium for defects), the method comprising: writing a data pattern to at least one predetermined region of the storage medium; reading back the written data pattern; comparing the data pattern written to the data pattern read back and identifying any error in the data (col. 16, lines 37-49, Yamamuro teaches that the recorded data of each sector is compared with the reproduced data of each sector to identify any error in the data); if an error in the data was identified, then: identifying a defective region of the storage medium (col. 17, lines 18-25, Yamamuro, Note: the determination step S19 is a step for identifying a defective

region of the storage medium referred to as a defective block in the Yamamuro patent); reallocating a new region of the storage medium (col. 14, lines 62-67, Yamamuro, Note: replacing an ECC block containing a secondary defective sector with a replacement ECC block using a linear replacement algorithm is a step for reallocating a replacement ECC block from the spare area, see Figure 3, Yamamuro); initializing the reallocated new region for access (col. 15, lines 1-7, Yamamuro, Note: recording data indicating that the linear replacement process has been effected in memory 10 is a step for initializing the reallocated new region for access); and replacing the defective region with the reallocated region before any further degradation occurs (col. 14, lines 62-67, Yamamuro, Note: replacing an ECC block containing a secondary defective sector with a replacement ECC block using a linear replacement algorithm is a step for replacing the defective region with the reallocated region before any further degradation occurs). The prior art however are not concerned with and do not teach a step for "**determining** whether the predetermined region contains user data" incorporated into a method for testing a data storage medium for defects as taught by claim 2 and its base and intervening claims [Emphasis Added]. Hence the prior art taken alone or in any combination fail to teach the claimed novel feature in claim 2 in view of its base and intervening claims.

Claims 7-9 depend from claim 2.

Claims 11-13, 22-26 and 30 cite substantially similar language.

Claim 17 recites, "A method for testing a data storage medium for defects, the method comprising: determining when a usage level of the storage medium is within a range of usage level for which background processing is permitted, and when the usage level is within the permitted range performing as a background process" ... the method for testing a data storage medium for defects follows. The prior art however are not concerned with and do not teach a step for "determining when a usage level of the storage medium is within a range of usage level for which background processing is permitted, and when the usage level is within the permitted range performing as a background process" incorporated into a method for testing a data storage medium for defects as taught by claim 17. Hence the prior art taken alone or in any combination fail to teach the claimed novel feature in claim 17.

Claims 18-21 depend from claim 17.

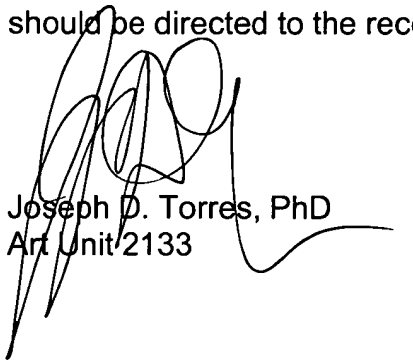
Claims 29 and 41 cite substantially similar language.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sasaki, Shinji et al. (US 6189118 B1) teaches a method and an apparatus for managing a defect thereof.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (703) 308-7066. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (703) 305-9595. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-746-7240.



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